

Michael Schmoller
Wisconsin Department of Natural Resources
South Central Region
3911 Fish Hatchery Road
Fitchburg, WI 53711

Subject:

Rain Garden Soil Removal Work Plan
Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.
Facility ID No. 113125320, BRRTS No. 02-13-001569

Dear Mr. Schmoller:

On behalf of the Madison-Kipp Corporation, this work plan presents the soil removal activities for the rain garden located on City of Madison property north of the Madison-Kipp facility at 201 Waubesa Street in Madison, Wisconsin (Site). The work plan was developed based on the recommendations presented by the Wisconsin Department of Natural Resources (WDNR) and city of Madison Department of Public Health during a meeting on November 4, 2013. As requested during the meeting, this work plan presents the recommended approach to address residual soil impacts in the rain garden.

Rain Garden Location and Description

The city of Madison constructed a “rain garden” in 2006 on city property near the northeast corner of the Site (Figure 1). The parcel is currently zoned by the city of Madison as limited manufacturing. The rain garden was a demonstration project completed by the city of Madison to illustrate how runoff of precipitation in an urban setting can be reduced through the use of vegetated areas. The rain garden captures precipitation runoff from the adjoining bike path and from the Site’s north parking lot. A topographic survey of the rain garden was completed on May 6, 2013, by North Shore Engineering located in Mequon, Wisconsin. The rain garden is approximately 2 feet deep based on the topographic contours presented on Figure 1.

In 2005, CGC, Inc. of Madison, Wisconsin was contracted by the city of Madison to complete a geotechnical exploration program in preparation for the “Kipp Rain Garden” (CGC, 2005). The geotechnical exploration program included the advancement of three direct push soil borings (B-1 through B-3) to 12 feet below land surface (bls) at the location of the proposed rain garden and an estimate of infiltration potentials. Clayey soils were observed in the soil borings with estimated infiltration potentials ranging from 0.24 to 0.5 inches per hour. Groundwater was encountered

Imagine the result

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ENVIRONMENT

Date:
December 18, 2013

Contact:
Jennine Trask

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Our ref:
WI001368.0002

between 9 to 10 feet bls. According to the Geotechnical Exploration Report prepared by CGC, the area at the time of the investigation was a grassy ditch or drainage way with a few small trees. The city of Madison did not prepare a construction report to document the final construction of the rain garden. Reportedly, the rain garden was constructed and backfilled with the existing soils.

Soil Investigation

On June 21, 2012, ARCADIS advanced one hand auger soil boring (B-23) to 4 feet bls through the base of the rain garden, and one hand auger soil boring (B-34) to 4 feet bls downstream of the rain garden (Figure 2). The soils were described as clay with little silt and sand. Soil samples were collected from each soil boring and submitted for laboratory analyses, including volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), Resource Conservation Recovery Act metals, and total cyanide from samples collected 0 to 1 and 2 to 4 feet bls. Soil analytical results are summarized in Table 1 and presented on Figure 2. Below is a brief summary of the soil analytical results.

- VOC concentrations were reported below laboratory detection limits.
- PCB concentrations at soil boring B-23 were reported above the industrial residual contaminant level (RCL) of 0.744 milligrams per kilogram (mg/kg) from 0 to 1 foot bls (0.82 mg/kg) and from 2 to 4 feet bls (2.5 mg/kg) for Aroclor 1248. PCB concentrations at soil boring B-34 were reported below the industrial RCL in both soil samples.
- PAH concentrations were reported below the industrial RCLs.
- Arsenic concentrations were reported above the industrial RCL of 1.59 mg/kg in soil boring B-23 from 0 to 1 foot bls (3.8 mg/kg) and from 2 to 4 feet bls (8.7 mg/kg), and in soil boring B-34 from 0 to 1 foot bls (8.2 mg/kg) and from 2 to 4 feet bls (5.7 mg/kg). However, as presented in the *Site Investigation and Interim Actions Report, February 2012-January 2013* dated March 2013, arsenic concentrations were found widespread on and off Site within a narrow range of concentrations. The presence of arsenic in the rain garden and downstream appears to represent naturally occurring background conditions.
- Total cyanide concentrations were reported below the industrial RCL.

Recommendations

As discussed during the November 4 meeting, the residual PCB-impacted soil above the industrial RCL in the rain garden will be excavated and disposed off Site in accordance with state and federal regulations. No additional downstream soil sampling is warranted due to the sample results from soil boring B-34. The following presents a description of the proposed activities:

- Prior to implementing the recommended response activities, a city of Madison permit to excavate in the right of way will be secured to allow for excavation of soil and backfill of clean materials at the rain garden.
- The Site health and safety plan will be updated to address the planned field activities. Utility marking arrangements will be made through Digger's Hotline (the State of Wisconsin Public Utility clearance service), a private utility locator, and/or discussions with property owners. Prior to beginning work each day, a "tailgate" health and safety briefing will be held to discuss the activities and identify ways to ensure the health and safety of Site workers. If conditions are encountered during activities that differ from those outlined in the health and safety plan, the Site activities will be re-evaluated to determine the appropriate actions that will ensure the health and well-being of the workers. Temporary construction fence and appropriate traffic control measures will be established around the northern perimeter of the rain garden and adjacent to the public bike path and private access path from Madison-Kipp.
- Utilities, including a high-voltage electric line, high-capacity fiber-optic lines, and natural gas are present below ground north and south of the rain garden. Additionally, overhead power lines, an electric pole and two sets of ground tension lines are present within or above the rain garden. ARCADIS met with Madison Gas and Electric (MG&E) personnel on site to inspect the utility lines. Per MG&E requirements, soils must not be disturbed within ten (10) feet of the electric pole or ground tension lines. ARCADIS will coordinate oversight by MG&E personnel if required during excavation activities. Figure 3 shows approximate utility locations and proposed excavation limits.
- Soils within the rain garden containing PCBs at concentrations above 0.744 mg/kg will be excavated and disposed at an approved landfill. Soils will be excavated to a depth of 4 feet bls. The excavation area limits are shown on Figure 3. Due to utilities present, soils will be excavated to the extent practicable within the boundaries of the rain garden.

- Soils will be stockpiled on Madison-Kipp's north parking lot to accommodate the safe removal of the soils adjacent to utilities and beneath overhead power lines. Soils will be placed on and covered with polyethylene plastic sheeting.
- The soils will be disposed at Advanced Disposal Services (formerly Veolia) Glacier Ridge Landfill in Horicon, Wisconsin.
- Confirmation soil samples will be collected from approximately every 20 feet along the base and side walls of the excavation area as shown on Figure 3. Approximately 27 base and side wall samples will be collected. Samples will be collected in clean, laboratory-supplied sample containers, and placed in a cooler filled with ice. Each sample will be submitted for laboratory analysis of PCBs by United States Environmental Protection Agency (U.S. EPA) SW-846 Method 8082. The samples will be submitted using appropriate chain-of-custody procedures.
- In accordance with U.S. EPA requirements, the quality assurance, quality control, and technical activities and procedures associated with implementing this work plan will be conducted per the approved quality assurance procedures presented in the *Final Revised Work Plan for Polychlorinated Biphenyl Recommended Activities* dated December 4, 2012.
- If the soil samples contain PCB concentrations less than 0.744 mg/kg, no further action is necessary. If additional work is needed to address PCBs located within the rain garden, Madison-Kipp will coordinate such efforts with WDNR. However, due to the utilities present and the location of the bike path, there is limited room for additional excavation as presented on Figure 3.
- The excavation will be backfilled with clean material to current grade. The responsibility of the backfill activities will be dependent on the backfill material currently present in the rain garden (city of Madison or Madison-Kipp). City of Madison staff and/or city contractors will complete the re-planting and establishment of rain garden vegetation.
- A documentation letter will be prepared and submitted to WDNR, the city of Madison, and U.S. EPA summarizing the excavation, sampling, and backfill activities.

Coordination and initiation of the scope of work detailed above will begin following receipt of WDNR approval. The schedule may be modified based on availability of

subcontractors and weather conditions. It is anticipated that the work will begin in winter 2014.

Closing

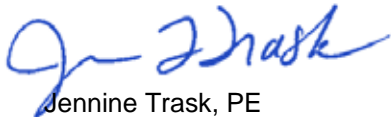
If you have any questions or require any additional information, please contact us at 414.276.7742.

Sincerely,

ARCADIS U.S., Inc.



Christopher Kubacki, PE
Senior Engineer



Jennine Trask, PE
Project Manager

Copies:

John Hausbeck - City of Madison
Brynn Bemis - City of Madison
David Crass - Michael, Best, & Friedrich LLP
Mark Meunier - Madison-Kipp Corporation
Steve Tinker - Wisconsin Department of Justice (electronic)

Attachments:

Table 1 – Rain Garden Soil Analytical Results
Figure 1 – Location of Rain Garden
Figure 2 – Soil Analytical Results
Figure 3 – Proposed Rain Garden Excavation Area and Confirmation Soil Sample Locations

Table 1. Rain Garden and Downstream Soil Analytical Results, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Boring ID Sample Interval (feet bls) Sample Date	Soil to Groundwater Pathway RCL	Non-Industrial Direct Contact RCL	Industrial Direct Contact RCL	EPA High Occupancy Cleanup Level	TSCA Disposal Limit	B-23		B-34	
						0-1	2-4	0-1	2-4
						6/21/2012	6/21/2012	6/21/2012	6/21/2012
VOCs (mg/kg)									
1,1-Dichloroethene	0.00502	342	1,190	NE	NE	<0.023	<0.02	<0.018	<0.019
1,2,3-Trichlorobenzene	NE	48.9	151	NE	NE	<0.026 *	<0.023 *	<0.021 *	<0.022 *
1,2,4-Trichlorobenzene	0.408	22.1	98.7	NE	NE	<0.028 *	<0.025	<0.023 *	<0.024 *
1,2,4-Trimethylbenzene	NE	89.8	219	NE	NE	<0.016	<0.014	<0.013	<0.013
1,2-Dichlorobenzene	1.168	376	376	NE	NE	<0.015	<0.013	<0.012	<0.013
1,3,5-Trimethylbenzene	NE	182	182	NE	NE	<0.016	<0.014	<0.012	<0.013
Benzene	0.00512	1.49	7.41	NE	NE	<0.0056	<0.0049	<0.0045	<0.0047
Carbon tetrachloride	0.00388	0.854	4.25	NE	NE	<0.019	<0.017	<0.015	<0.016
cis-1,2-Dichloroethene	0.0412	156	2,040	NE	NE	<0.0093	<0.0081	<0.0074	<0.0077
Ethylbenzene	1.57	7.47	37	NE	NE	<0.0095	<0.0083	<0.0076	<0.0079
Isopropylbenzene	NE	268	268	NE	NE	<0.019	<0.016	<0.015	<0.016
Naphthalene	0.6587	5.15	26	NE	NE	<0.037	<0.032 *	<0.03	<0.031
n-Butylbenzene	NE	108	108	NE	NE	<0.0097	<0.0085	<0.0078	<0.0081
N-Propylbenzene	NE	264	264	NE	NE	<0.013	<0.011	<0.011	<0.011
p-Isopropyltoluene	NE	162	162	NE	NE	<0.014	<0.012	<0.011	<0.012
sec-Butylbenzene	NE	145	145	NE	NE	<0.012	<0.01	<0.0093	<0.0097
tert-Butylbenzene	NE	183	183	NE	NE	<0.01	<0.0089	<0.0082	<0.0085
Tetrachloroethene	0.00454	30.7	153	NE	NE	<0.013	<0.011	<0.01	<0.01
Toluene	1.1072	818	818	NE	NE	<0.0087	<0.0076	<0.0069	<0.0072
trans-1,2-Dichloroethene	0.0588	211	976	NE	NE	<0.019	<0.016	<0.015	<0.016
Trichloroethene	0.00358	0.644	8.81	NE	NE	<0.014	<0.012	<0.011	<0.012
Vinyl chloride	0.000138	0.0671	2.03	NE	NE	<0.0078	<0.0068	<0.0063	<0.0065
Xylenes, Total	3.94	258	258	NE	NE	<0.0052	<0.0045	<0.0041	<0.0043
PAHs (mg/kg)									
1-Methylnaphthalene	NE	NE	NE	NE	NE	<0.12	<0.021	<0.019	<0.019
2-Methylnaphthalene	NE	229	368	NE	NE	<0.31	<0.054	<0.05	<0.05
Acenaphthene	NE	3,440	33,000	NE	NE	<0.071	<0.013	<0.012	<0.012
Acenaphthylene	NE	487	487	NE	NE	<0.054	<0.0096	<0.0089	<0.0089
Anthracene	196.74	17,200	100,000	NE	NE	<0.055	0.017 J	0.019 J	<0.0091
Benzo(a)anthracene	NE	0.148	2.11	NE	NE	0.1 J	0.072	0.097	0.019 J
Benzo(a)pyrene	0.47	0.0148	0.211	NE	NE	0.18 J	0.061	0.096	0.029 J

Footnotes on Page 3.

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						0-1	2-4	0-1	2-4
						6/21/2012	6/21/2012	6/21/2012	6/21/2012
PAHs (mg/kg) (continued)									
Benzo(b)fluoranthene	0.48	0.148	2.11	NE	NE	0.31	0.085	0.15	0.04
Benzo(g,h,i)perylene	NE	NE	NE	NE	NE	0.15 J	0.038 J	0.094	0.013 J
Benzo(k)fluoranthene	NE	1.48	21.1	NE	NE	<0.056	0.033 J	0.054	0.017 J
Chrysene	0.1451	14.8	211	NE	NE	0.17 J	0.073	0.12	0.025 J
Dibenz(a,h)anthracene	NE	0.0148	0.211	NE	NE	<0.066	<0.012	0.027 J	<0.011
Fluoranthene	88.82	2,290	22,000	NE	NE	0.18 J	0.14	0.14	0.02 J
Fluorene	14.81	2,290	22,000	NE	NE	<0.054	<0.0095	<0.0088	<0.0088
Indeno(1,2,3-cd)pyrene	NE	0.148	2.11	NE	NE	0.11 J	0.032 J	0.071	<0.013
Naphthalene	0.6587	5.15	26	NE	NE	<0.045	<0.0081	<0.0075	<0.0075
Phenanthrene	NE	115	115	NE	NE	0.13 J	0.085	0.09	<0.016
Pyrene	54.47	1,720	16,500	NE	NE	0.19 J	0.11	0.14	0.022 J
PCBs (mg/kg)									
Aroclor-1242	NE	0.222	0.744	NE	NE	<0.039	<0.07	<0.0066	<0.0067
Aroclor-1248	NE	0.222	0.744	NE	NE	0.82	2.5	0.23	0.065
Aroclor-1254	NE	0.222	0.744	NE	NE	<0.026	<0.046	0.25 B	0.054 B
Aroclor-1260	NE	0.222	0.744	NE	NE	<0.059	<0.1	<0.0098	<0.01
Total Detected PCBs	NE	NE	NE	1	50	0.82	2.5	0.48	0.119
RCRA Metals (mg/kg)									
Arsenic	0.584	0.39	1.59	NE	NE	3.8	8.7	8.2	5.7
Barium	164.8	15,300	100,000	NE	NE	90	96	110	84
Cadmium	0.752	70.2	803	NE	NE	0.85	<0.06	0.36	<0.059

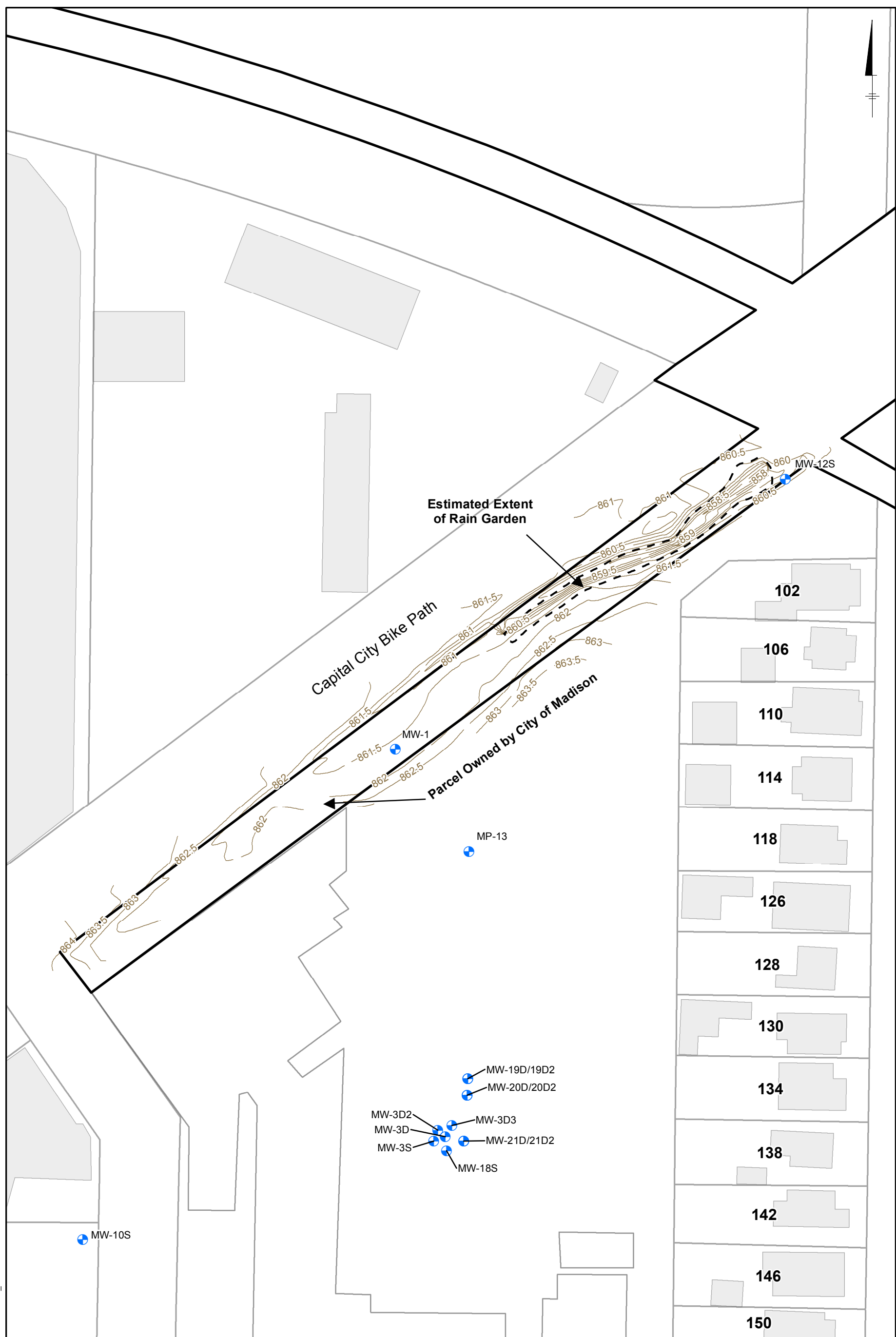
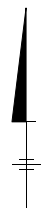
Footnotes on Page 3.

Table 1. Rain Garden and Downstream Soil Analytical Results, Madison-Kipp Corporation, 201 Waubesa Street, Madison, Wisconsin.

Boring ID	Soil to Groundwater Pathway RCL	Non-Industrial Direct Contact RCL	Industrial Direct Contact RCL	EPA High Occupancy Cleanup Level	TSCA Disposal Limit	B-23		B-34	
						0-1 6/21/2012	2-4 6/21/2012	0-1 6/21/2012	2-4 6/21/2012
RCRA Metals (mg/kg) (continued)									
Chromium	360,000	NE	NE	NE	NE	15	24	46	22
Lead	27	400	800	NE	NE	24	22	26	8.9
Mercury	0.208	3.13	3.13	NE	NE	0.052	0.056	0.13	0.028
Selenium	0.52	391	5,110	NE	NE	<0.41	<u>0.80 J</u>	0.39 J	<0.34
Silver	0.8497	391	5,110	NE	NE	<0.086	<0.073	0.20 J	<0.072
Cyanide, Total (mg/kg)	4.04	46.9	613	NE	NE	0.47 J B ^	<0.21	0.46 J B ^	0.56 B ^






Only detected constituents are noted. Please refer to laboratory reports for a complete list of constituents and results.

- 100** Exceeds the WDNR's non-industrial direct contact residual contaminant level.
- 100** Exceeds the WDNR's industrial direct contact residual contaminant level.
- 100** Exceeds the WDNR's soil to groundwater pathway residual contaminant level.
- 100** Exceeds the EPA's self-implementing high-occupancy cleanup level with no site restrictions.
- * Laboratory control spike or laboratory control spike duplicate exceeds the control limits.
- < Constituent not detected above noted laboratory detection limit.
- ^ Laboratory instrument related quality control limits exceeded.
- J Constituent concentration is an approximate value.
- B Compound was found in the blank and sample.
- bls Below land surface.
- mg/kg Milligrams per kilogram.
- NE Criteria not established.
- PAHs Polycyclic Aromatic Hydrocarbons.
- PCBs Polychlorinated Biphenyls
- RCL Residual contaminant level.
- RCRA Resource Conservation Recovery Act.
- TSCA Toxic Substance Control Act.
- EPA United States Environmental Protection Agency.
- VOCs Volatile Organic Compounds.

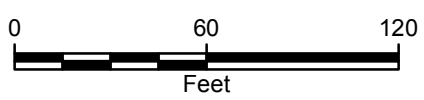


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LEGEND

-  MONITORING WELL
-  TOPOGRAPHIC CONTOUR
-  ESTIMATED EXTENT OF RAIN GARDEN
-  PARCELS
-  BUILDING FOOTPRINTS

ALL LOCATIONS ARE APPROXIMATE.



MADISON-KIPP CORPORATION
 201 WAUBESA STREET
 MADISON, WISCONSIN

LOCATION OF RAIN GARDEN

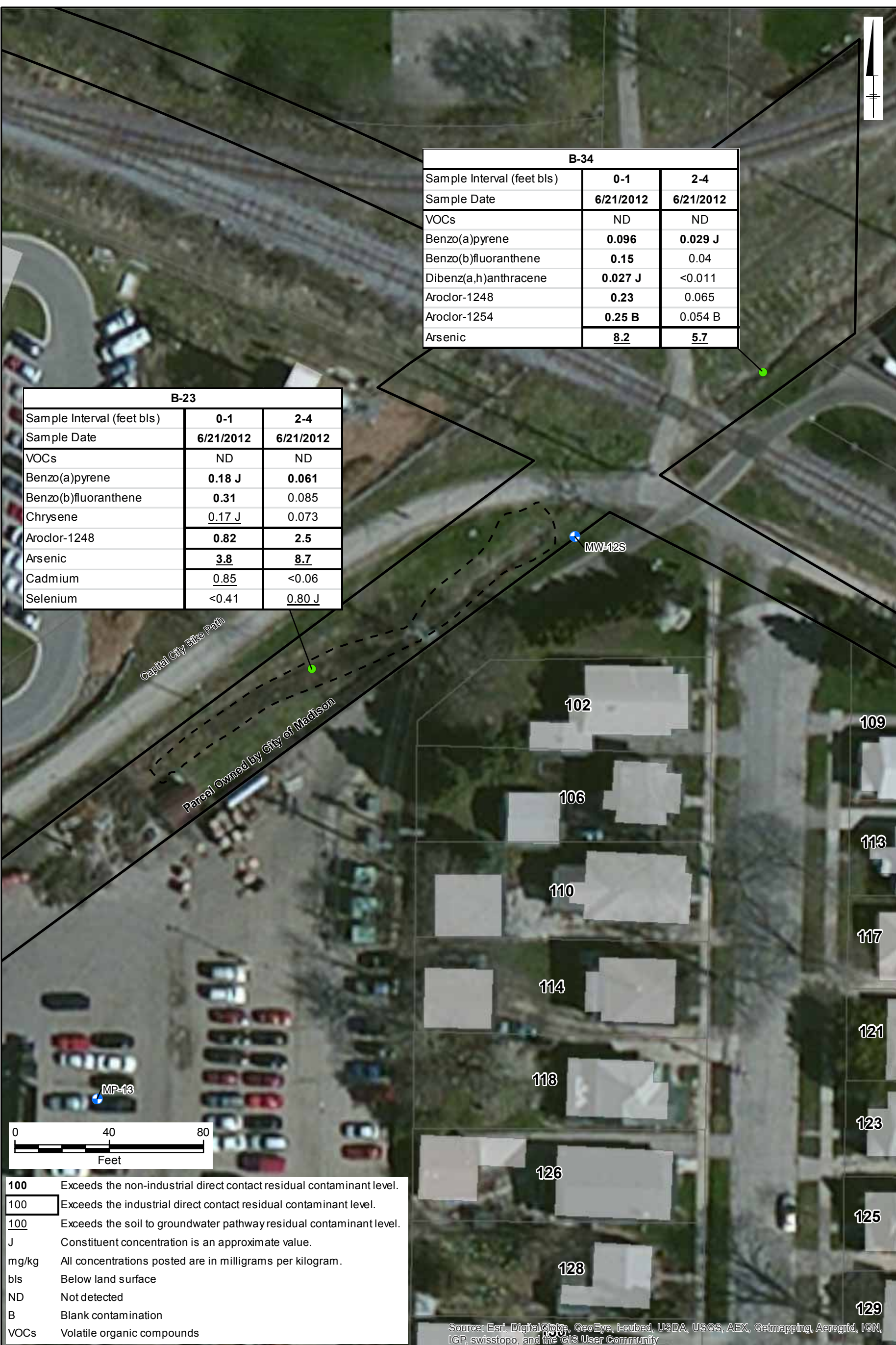


FIGURE
1

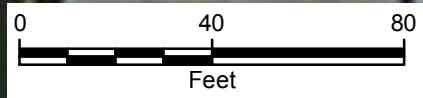


B-34		
Sample Interval (feet bls)	0-1	2-4
Sample Date	6/21/2012	6/21/2012
VOCs	ND	ND
Benzo(a)pyrene	0.096	0.029 J
Benzo(b)fluoranthene	0.15	0.04
Dibenz(a,h)anthracene	0.027 J	<0.011
Aroclor-1248	0.23	0.065
Aroclor-1254	0.25 B	0.054 B
Arsenic	8.2	5.7

B-23		
Sample Interval (feet bls)	0-1	2-4
Sample Date	6/21/2012	6/21/2012
VOCs	ND	ND
Benzo(a)pyrene	0.18 J	0.061
Benzo(b)fluoranthene	0.31	0.085
Chrysene	0.17 J	0.073
Aroclor-1248	0.82	2.5
Arsenic	3.8	8.7
Cadmium	0.85	<0.06
Selenium	<0.41	0.80 J



Capital City Bike Path
Parcel Owned by City of Madison



100 Exceeds the non-industrial direct contact residual contaminant level.
100 Exceeds the industrial direct contact residual contaminant level.
100 Exceeds the soil to groundwater pathway residual contaminant level.
J Constituent concentration is an approximate value.
mg/kg All concentrations posted are in milligrams per kilogram.
bls Below land surface
ND Not detected
B Blank contamination
VOCs Volatile organic compounds

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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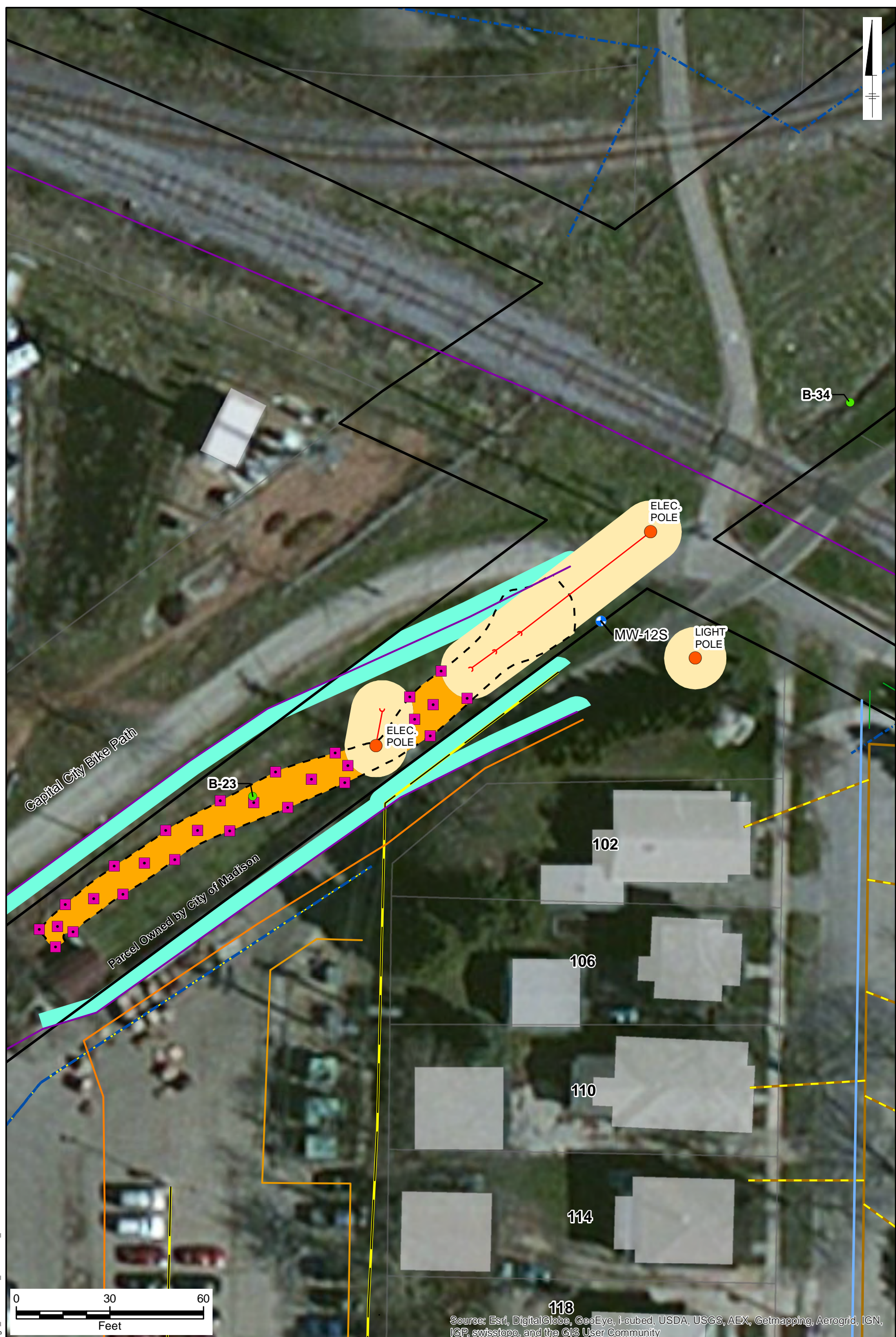
- SOIL BORING LOCATION
- ⊕ MONITORING WELL
- PERIMETER OF RAIN GARDEN
- PARCELS
- BUILDING FOOTPRINTS

ALL LOCATIONS ARE APPROXIMATE.

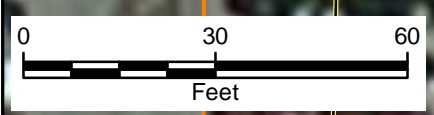
MADISON-KIPP CORPORATION
201 WAUBESA STREET
MADISON, WISCONSIN

SOIL ANALYTICAL RESULTS

FIGURE 2



CITY: MKE DIV/GROUP: IM DB: GM LD: CK MADISON-KIPP
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Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

LEGEND			
	PROPOSED CONFIRMATION SOIL SAMPLE LOCATIONS		UTILITY POLE
	SOIL BORING LOCATION		WATER MAIN
	MONITORING WELL		ABANDONED SANITARY MAIN
	PARCELS		SANITARY LATERALS
	BUILDING FOOTPRINTS		SANITARY MAINS
	PERIMETER OF RAIN GARDEN		GROUND TENSION WIRE
			GAS
			SVE TRENCH
			COMMUNICATIONS
			STORM WATER
			ESTIMATED EXTENT OF EXCAVATION
			5' BUFFER
			10' BUFFER

ALL LOCATIONS ARE APPROXIMATE.

MADISON-KIPP CORPORATION
201 WAUBESA STREET
MADISON, WISCONSIN

**PROPOSED RAIN GARDEN
EXCAVATION AREA AND
CONFIRMATION SOIL SAMPLE LOCATIONS**

FIGURE
3